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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,455	03/26/2001	Leonid Kazakevich	I-2-157.1US	9421

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EXAMINER

WARE, CICELY Q

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 06/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,455

Applicant(s)

KAZAKEVICH ET AL.

Examiner

Cicely Ware

Art Unit

2634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claims 3 and 4 are objected to because of the following informalities:
- a. Examiner suggests applicant insert a space between claim language of claims 3 and 4 for clarification purposes and uniformity of claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites "sufficiently high". Sufficiently is a vague and indefinite limitation because it does not distinctly reference a definite boundary for the limitations in the claim.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by Ichihara (US Patent 5,533,064) (cited by applicant).

(1) With regard to claim 1, Ichihara discloses in (Fig. 1 and Fig. 2) an automatic gain controller operating on a quadrature modulated communication signal having amplitude modulated and phase modulated components, comprising: a limiting amplifier (Fig. 2 (20, 40)) receiving the quadrature modulated communication signal for producing phase information corresponding to real and imaginary signal components of the quadrature modulated communication signal; a logarithmic detector (Fig. 1 (30, 32)) receiving the quadrature modulated communication signal for producing an analog representation of the power of the received signal; outputs of said limiting amplifier and said logarithmic detector being utilized to reliably obtain amplitude modulated information from the quadrature modulated communication signal (Fig. 1 (20, 30), col. 1, lines 22-29, 44-47, 59-62, col. 2, lines 35-38, 53-56).

(2) With regard to claim 2, claim 2 inherits all the limitations of claim 1. Ichihara further discloses in (Fig. 1 and Fig. 2) wherein analog-to-digital converters (Fig. 1 (24, 25, 32)) are utilized to convert the outputs of said limiting amplifier (Fig. 1 (20), Fig. 2 (20, 40)) and logarithmic detector (Fig. 1 (30)) to enable manipulation of the outputs of the limiting amplifier and logarithmic detector in a digital format.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ichihara (US Patent 5,533,064) as applied to claim 1 above, in view of Suzuki et al. (US Patent 5,818,875).

(1) With regard to claim 3, claim inherits all the limitations of claim 1. However Ichihara does not disclose a demodulator coupled to said limiting amplifier for generating I and Q outputs derived from the output of said limiting amplifier.

However Suzuki et al. discloses in (Fig. 34 and Fig. 35) a demodulator coupled to said limiting amplifier (Fig. 35 (3501)) for generating I and Q outputs (Fig. 35 (2204, 2206, 2205)) derived from the output of said limiting amplifier (col. 1, lines 35-45, col. 2, lines 19-26, col. 33, lines 6-12, 25-26).

Therefore it would have been obvious to one of ordinary skill in the art to modify the Ichihara to incorporate a demodulator coupled to said limiting amplifier for generating I and Q outputs derived from the output of said limiting amplifier in order to provide fast and large capacity radio transmissions without detecting an absolute amplitude of a modulating signal under a condition of abrupt level changes such as fading (Suzuki et al., col. 2, lines 40-44).

(2) With regard to claim 4, claim 4 inherits all the limitations of claim 3. Ichihara further discloses in (Fig. 1 (24, 25, 32, 20, 30)) analog-to-digital converters for respectively converting the outputs of the I and Q signals and the logarithmic detector to

enable manipulation of the outputs of the demodulator and logarithmic converter in a digital format.

(3) With regard to claim 5, claim 5 inherits all the limitations of claim 3. Suzuki et al. further discloses wherein said I signal has the form $C \sin(\omega t + \alpha)$ and the Q signal has the form $C \cos(\omega t + \alpha)$ where C is a constant and does not vary with power variation of the quadrature modulated communication signal (col. 33, lines 6-12, 36-41, col. 34, lines 44-67).

(4) With regard to claim 7, claim 7 inherits all the limitations of claim 4. Ishihara further discloses in (Fig. 1) a data manipulator (26, 27) for generating outputs representing the phase and amplitude information inputted to the controller in digital form (24, 25, 32) (abstract, col. 2, lines 8-11).

7. Claims 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishihara (US Patent 5,533,064) as applied to claim 1 and 2 above, in view of Dent et al. (US Patent 6,195,399).

(1) With regard to claim 6, claim 6 inherits all the limitations of claim 1. However Ishihara does not disclose wherein the logarithmic detector has a response time faster than 1 unit of transmitted information which may be a chip, a bit or a symbol.

However Dent et al. discloses in (Fig. 1 (18)) wherein the logarithmic detector has a response time faster than 1 unit of transmitted information which may be a chip, a bit or a symbol (col. 1, lines 50-52, col. 4, lines 63-67, col. 5, lines 1-16, 50-59, 64-67, col. 6, lines 1-17).

Therefore it would have been obvious to one of ordinary skill in the art to modify the Ishihara to incorporate wherein the logarithmic detector has a response time faster than 1 unit of transmitted information which may be a chip, a bit or a symbol in order to provide a cost effective way of producing the I and Q components of a wide band IF signal without drawing the substantial current required by high frequency clocking circuits (Dent et al., col. 2, lines 39-42).

(2) With regard to claim 8, claim 8 inherits all the limitations of claim 2. Dent et al. further discloses in (Fig. 2) wherein the analog to digital converter (51) coupled to the limiting amplifier (18) has a sampling rate (32) which is sufficiently high to provide digital conversion of the phase information to avoid the need for a demodulator (col. 3, lines 58-62, col. 5, lines 64-67, col. 6, lines 1-17).

Conclusion

8. The prior art made record of and not relied upon is considered pertinent to applicant's disclosure:

a. Kanazawa et al. US Patent 5,771,263 (cited by applicant) discloses a communication system control method.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cicely Ware whose telephone number is 703-305-8326. The examiner can normally be reached on Monday – Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers

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for the organization where this application or proceeding is assigned are 703-872-9314
for regular communications and 703-872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is 703-305-
3900.

Cicely Ware

cqw
June 3, 2004



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800